

### **Amendments to the Claims**

#### **Listing of Claims:**

1 – 30. (Canceled)

31. (New) A method of analyzing events occurring on a distributed network comprising a plurality of processors, the method comprising:

    during offline processing:

        updating a recent history table with critical events and any associated non-critical events that may occur in the distributed network;

        computing conditional probability values into a probability table, said probability values comprising joint probability values reflecting a probability that a sequence of two or more non-critical events happen before the critical event occurs;

        periodically updating the probability table;

        periodically examining the probability table to determine when online analysis of the non-critical event is possible; and

        generating event masks for use in a masking mechanism to filter a subset of the non-critical events associated with the critical events so that online analysis can be carried out in real-time;

during online processing:

loading the conditional probability table and the event masks computed from offline analysis;

dynamically filtering the non-critical events using the masking mechanism comprising timeout and probability thresholds;

determining that the probability of the occurrence of the critical event has surpassed a threshold level using the conditional probability table;

migrating a process away from the critical event if it is determined that a timeout period has not elapsed; and

if it is determined that the timeout period has elapsed:

reloading the conditional probability tables; and

generating new event masks to filter another subset of the non-critical events.

32. (New) The method of claim 31 wherein the step of dynamically filtering comprises:

using AND gates to filter and unfilter events based on online and offline analysis; and

using OR gates to record a final time stamp and event type in the recent history table.

33. (New) The method of claim 31 further comprising an online processing step of:

producing a local counter value for each of the plurality of processors in the distributed network.

34. (New) The method of claim 33 further comprising an online processing step of:

synchronizing the local counter value at each of the processors with a global clock.

35. (New) The method of claim 34 further comprising an online processing step of:

freezing the local counter value for a processor when a critical event associated with the processor occurs.